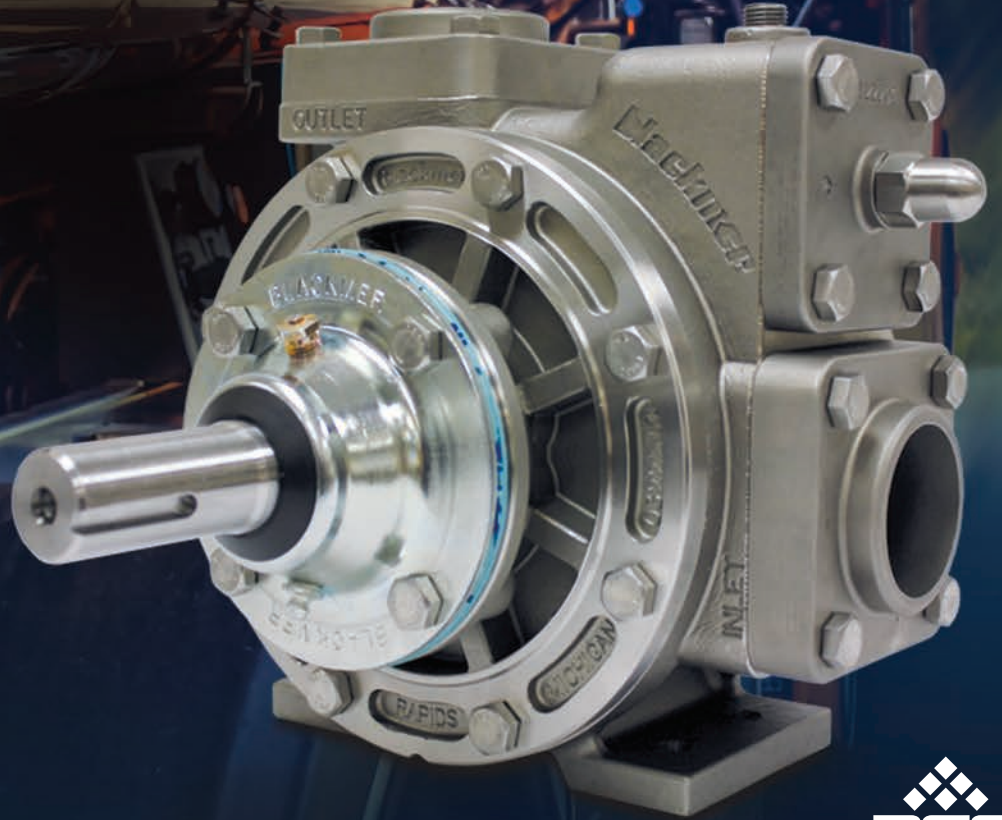


# STX Series

STAINLESS STEEL TRUCK-MOUNTED SLIDING VANE PUMPS  
PRODUCT BROCHURE



Where Innovation Flows



Blackmer® Stainless Steel STX Series Truck-Mounted Sliding Vane Pumps are the optimal solution for the fast and quiet fluid transfer applications on trucks and tankers.

## STAINLESS STEEL PUMPS FOR LOADING AND OFF-LOADING APPLICATIONS

### Blackmer® STX Series Stainless Steel Truck-Mounted Sliding Vane Pumps

Blackmer STX Pumps have two distinct series:

**STX(2/1220/3)** for solvents, chemicals, sulfates, vegetable oils, urea and acids.

**STX-DEF(2/1220/3 & SX1-DEF)** specifically cleaned for fluid transfer of Diesel Exhaust Fluid (DEF), also known as AdBlue.

These two distinct STX Pump Series are the same except for the following differences, STX-DEF Series Pumps:

- Require special pump cleaning procedures
- Meet or exceed all industry specifications for DEF Aqueous Urea Solutions (AUS32)
- Offer a 1" model, the SX1-DEF, perfect for dispenser or tote filling

All STX Series Sliding Vane Pumps (except for SX1-DEF) are available in three models with 2" & 3" port sizes, differential pressure of 125 psi (8.6 bar) and flow rates of 7 to 250 gpm (27 - 946 L/m). Included in the series are 2-inch sized high speed models (STX1220 and STX1220-DEF) that achieve a maximum speed of 1,200 rpm. All STX Series Sliding Vane Truck Pumps (except for SX1-DEF) feature a double-ended shaft for clockwise or counter-clockwise rotation and an adjustable relief valve. Constructed from 316 stainless steel, the STX Pumps are equipped with the following: external ball bearings, non-metallic Duravanes, PTFE elastomers, and Blackmer chemical mechanical seals. Additionally the STX3 models feature a versatile mounting bracket.

With the sliding vane design, Blackmer STX Series Pumps are self-priming and capable of extended dry run, better product recovery and line-stripping. These multifaceted capabilities allow the STX Series Sliding Vane Pumps to stand apart from other truck-mounted pump technologies with an ideal combination of high performance, safety, reliability and low maintenance.



STX3  
SLIDING VANE  
PUMP

STX2  
SLIDING VANE  
PUMP



# Blackmer® STX Series | Design Features

## Double-Ended Drive Shaft

Allows the pumps to be mounted in multiple ways to enhance mounting flexibility, and allow for clockwise or counter-clockwise rotation. Stainless steel shaft included on all models.

## 90° Porting

NPT threaded connection comes standard. Optional welded or victaulic connections are available.

## Internal Blackmer Mechanical Seals

Specially developed for non-lubricating liquids, Blackmer's exclusive component type design is field proven to provide long life and reliable service on a wide range of fluids.

## O-Ring

Buna-N, FKM type O-rings provide strong seal and offer an impressive range of chemical compatibility. PTFE O-rings are also available for extreme applications.

## Casing

316 stainless steel to protect against corrosive and caustic fluids.

## Adjustable Relief Valve

This spring actuated adjustable relief valve is designed to protect the pump from excessive pressure. Air operated relief valve options available.

## Closed Rotor

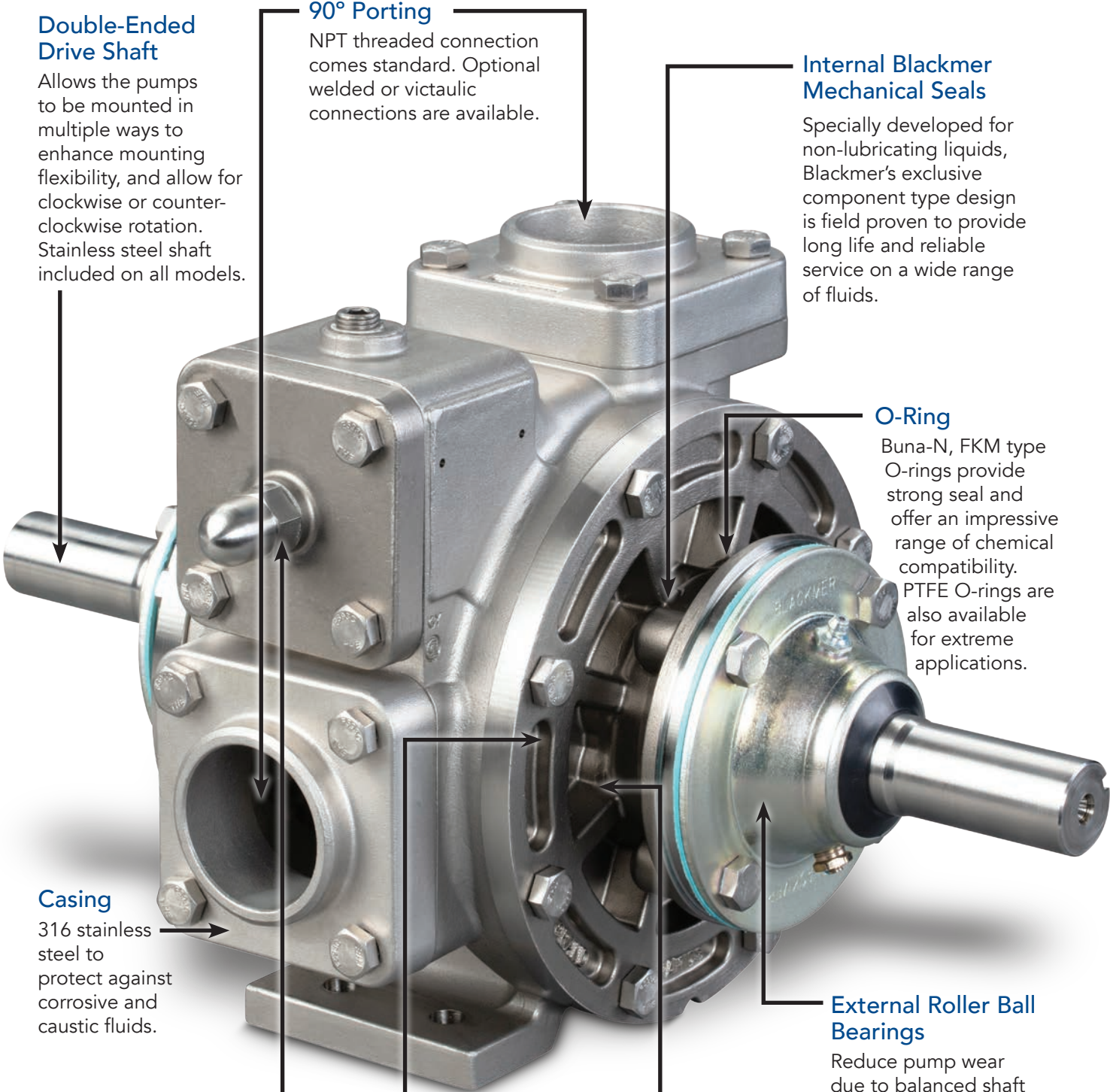
Special closed rotor design has minimal clearance to improve inlet performance allowing for line stripping, priming evacuated piping systems and vertical lift of fluid to the pump inlet.

## External Roller Ball Bearings

Reduce pump wear due to balanced shaft load, and decrease required maintenance due to greased bearing housing external from working fluid.

## Vanes

Vanes provide exceptional sealing which maintains performance over the operating life of the pump. Blackmer non-metallic Duravanes are self-adjusting and easily replaceable.



## SX1-DEF | DEF Dispenser Sliding Vane Pumps

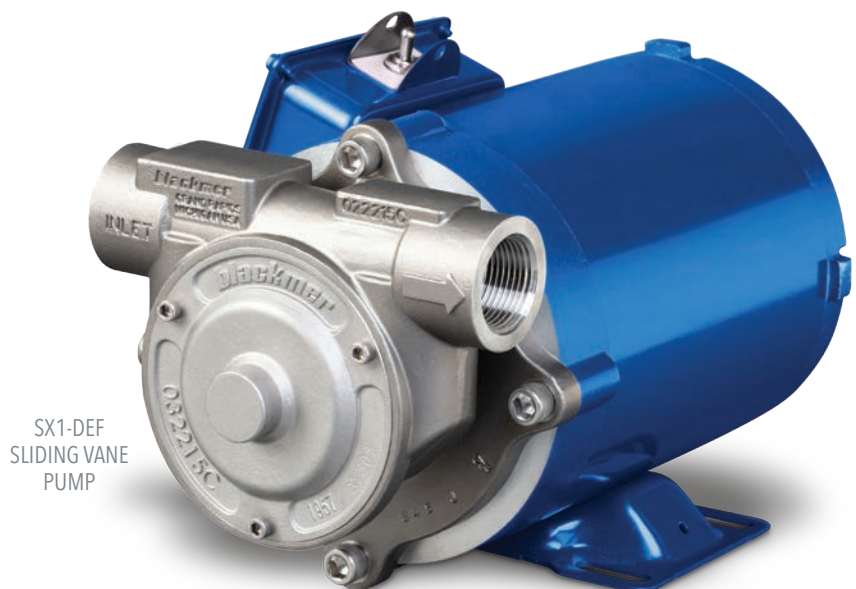
The Blackmer® SX1-DEF Sliding Vane Pump is a superior solution in dispenser and tote filling applications. When compared to low-cost, short-service "throwaway" pumps, which utilize inadequate designs and are often constructed of cheap plastic materials, SX1-DEF Sliding Vane Pumps stand apart due to their rugged design, reliability, durability and overall performance.

The 1-inch sized, 180° inline ported, SX1-DEF Sliding Vane Pumps achieve flow rates of 2 to 10 gpm (8 to 38 L/min), differential pressure of 25 psi (1.7 bar) and offers a top speed of 1,750. SX1-DEF is constructed from 304 & 316 stainless steel and includes an integral relief valve with stainless steel spring. With their C-face mounting, these pumps work well for dispenser and tote filling DEF applications. The SX1-DEF also meets and exceeds all industry specifications for DEF Aqueous Urea Solutions (AUS32). What further differentiates the SX1-DEF model from competitive models is a choice of 12-volt and 110-volt motor options. The 110-volt version is available with a 50- and 60-Hz dual-rated motor.

### Features

The SX1-DEF pumps offer the following operational features and benefits when dispensing DEF from various sized totes:

- Maximum flow rate: 10 gpm (37.9 L/min)
- Maximum differential pressure: 25 psi (1.7 bar)
- Motor speed: 1,750 rpm
- All 316 stainless-steel construction, including pump shaft
- Duravanes non-metallic vanes
- EPDM O-rings
- Commercial mechanical seal
- 180° porting with optional 1" NPT or 1" BSPP tapped ports
- Optional foot-mounted, 0.5-horsepower TENV, C-face close-coupled 12-volt or 110-volt motor
- Integral relief valve with stainless-steel spring
- Meets ISO 22241-3 certification for material compatibility



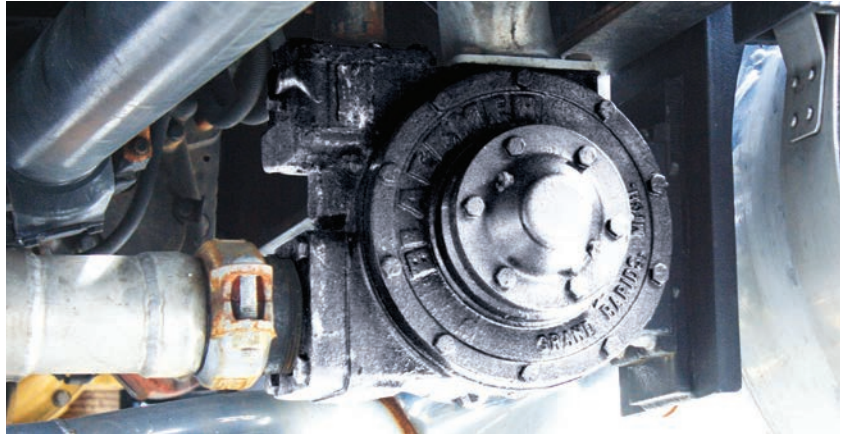
SX1-DEF  
SLIDING VANE  
PUMP

# BLACKMER® STX SERIES SLIDING VANE PUMPS

## Blackmer® STX Series | Mounting, Installation and Accessories

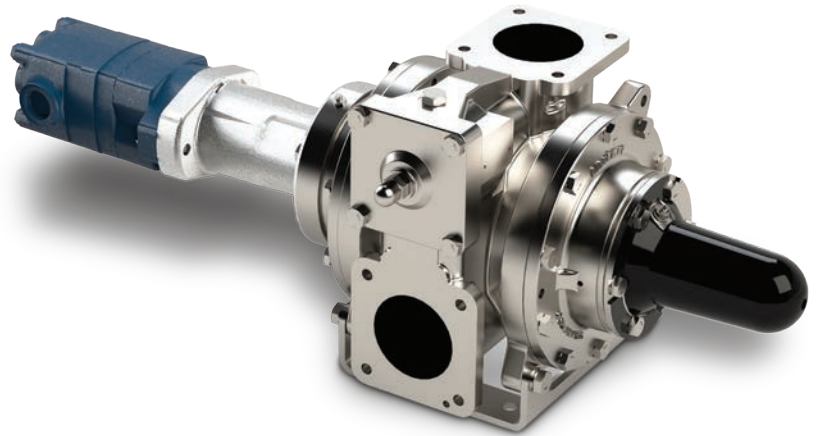
### Truck Mounting

STX Series Sliding Vane Pumps can be bolted to the truck on a saddle hung below the frame with adequate support. Mounting the pump with the cylinder feet down, or with the intake port up is recommended for thorough draining.



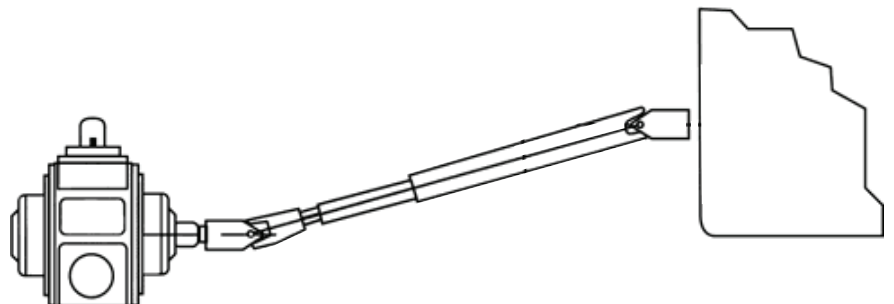
### Hydraulic Drive

With use of a Blackmer hydraulic motor adapter, all STX Series Pumps can be driven hydraulically. The close-coupled hydraulic motor adapter provides for alignment of an SAE, 2 bolt flanged hydraulic motor with a straight keyed shaft. The coupling connection requires grease lubrication every three months at minimum. Blackmer does not provide hydraulic motors.



### PTO Drive

A power take-off (PTO) through universal joints powers the pump. A properly lubricated splined slip joint must be used on the jackshaft to prevent end thrust on the pump shaft.



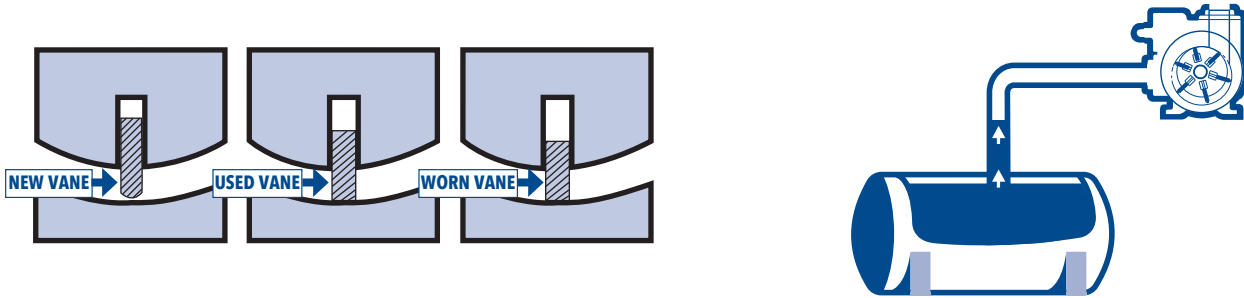
# Blackmer® STX Series | Benefits of Sliding Vane Pumps

## Self-Priming, Dry Run & Other Benefits of Blackmer Vane Pumps

The advent of sliding vane pumps has been a gamechanger in fluid-transfer applications. These positive displacement pumps are self-priming with extended dry-run capability and feature the best combined characteristics of energy efficiency, trouble-free operation and low maintenance.

### Advantages of Sliding Vane Technology:

- Unique design self-adjusts for wear to maintain flow rates
- Design provides sustained performance and trouble-free operation
- Easy maintenance. Vanes can be replaced without removing the pump
- Line-stripping capabilities to completely empty tanks and piping of fluid
- Pumps are renewable and repairable
- Solids handling
- Thin to thick fluid viscosity flexibility, eliminates expensive heating systems
- Efficient, requiring less horsepower and electricity to power the pump
- Excellent at self-priming, eliminates expensive priming systems
- Extended dry-run capability, eliminates nuisance current monitoring systems
- High suction lift abilities that exceed 25 feet (7.6 meters)



## STX Series Specs | Maximum Operating Limits

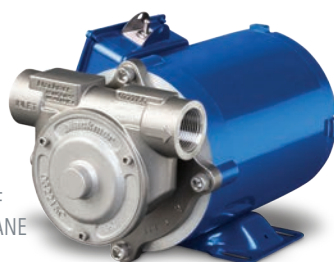
### MAXIMUM OPERATING LIMITS

Pump Model	Nominal Flow Rate Range	Viscosity	Minimum Operating Temperature	Maximum Operating Temperature	Min./Max. Speed	Maximum Differential Pressure	Maximum Working Pressure
	gpm (L/min)	cP	°F (°C)	°F (°C)	RPM	psi (bar)	psi (bar)
SX1-DEF	2 - 10 (8 - 38)	0.2 - 7	-25 (-32)	240 (115)	1,450 - 1,750	25 (1.7)	50 (3.4)
STX2 STX2-DEF	16 - 60 (61 - 227)	0.2 - 990	-25 (-32)	240 (115)	150 - 800	125 (8.6)	175 (12.1)
STX1220 STX1220-DEF	45 - 92 (171 - 348)	0.2 - 22	-25 (-32)	240 (115)	700 - 1,200	125 (8.6)	175 (12.1)
STX3 STX3-DEF	85 - 250 (322 - 946)	0.2 - 4,250	-25 (-32)	240 (115)	300 - 800	125 (8.6)	175 (12.1)

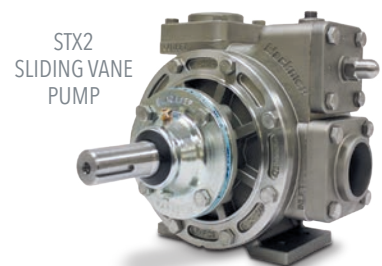
**Note:** Optional materials of construction may be required to meet specific application requirements – refer to Blackmer Material Specification Sheets. For operating conditions that exceed those listed, consult factory.



STX3  
SLIDING VANE  
PUMP

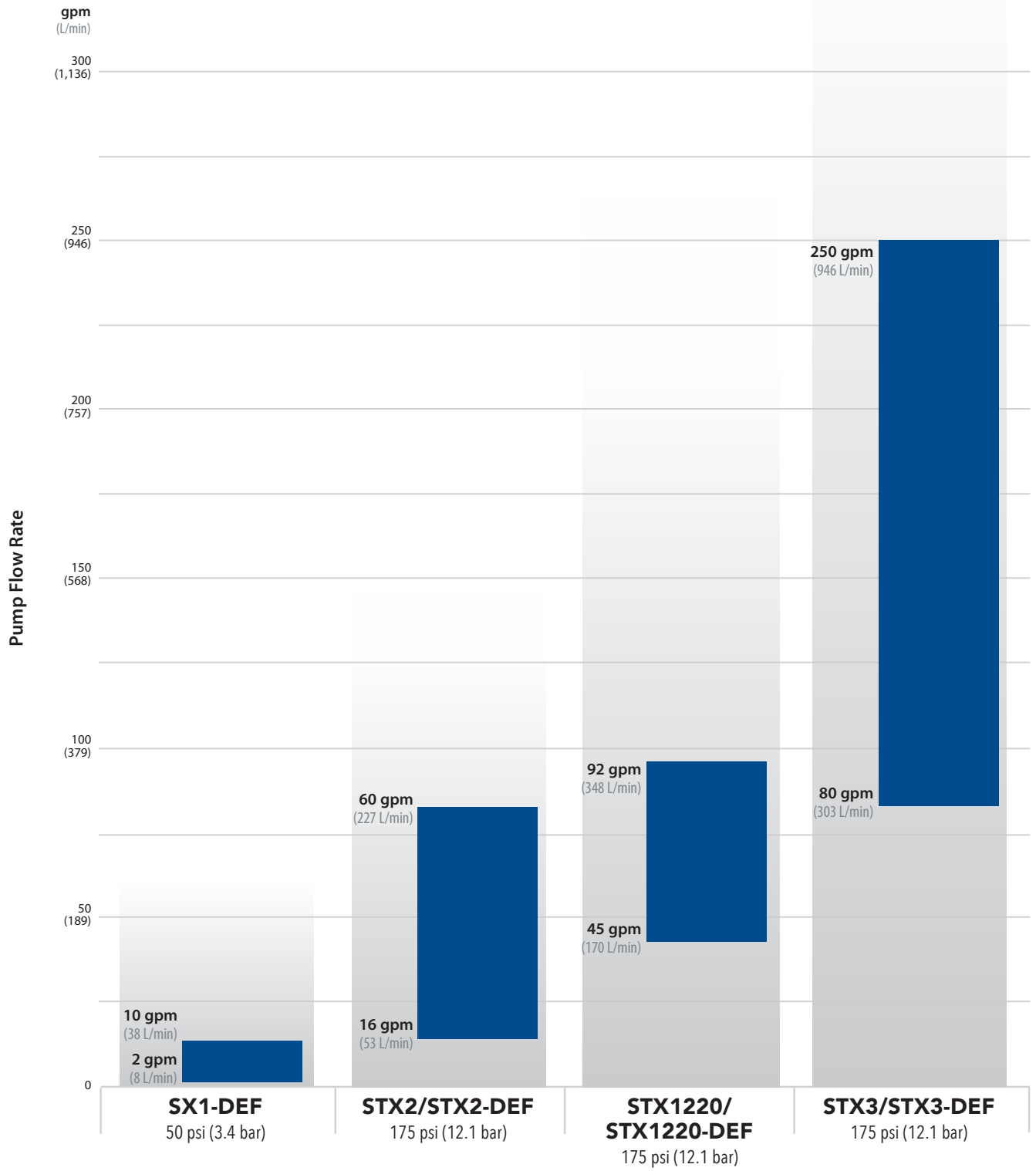


SX1-DEF  
SLIDING VANE  
PUMP



STX2  
SLIDING VANE  
PUMP

## Nominal Flow Rate Range



**Maximum Differential Pressure—STX/STX-DEF 125 psi (8.6 bar)**  
**Maximum Differential Pressure—SX1-DEF 25 psi (1.7 bar)**  
 (Internal relief valve setting)



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